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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,145	10/26/2001	Mark F. Krol	600-023	3130
20874	7590	03/29/2004	EXAMINER	
WALL MARJAMA & BILINSKI 101 SOUTH SALINA STREET SUITE 400 SYRACUSE, NY 13202			MOONEY, MICHAEL P	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/066,145	<b>Applicant(s)</b> KROL, MARK F.	
	<b>Examiner</b> Michael P. Mooney	<b>Art Unit</b> 2877	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-17,20-28,31-39 and 42-53 is/are rejected.
- 7) ☒ Claim(s) 2,3,18,19,29,30,40 and 41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

Claims 40-41 are objected to because of the following informalities: Claims 40-41 are stated as being dependent on claim 40, they should be listed as dependent on claim 39. Appropriate correction is required.

For the purposes of the rejection below, it will be assumed that claims 40-41 are each dependent on claim 39.

Similarly, claim 48 is objected to because of the following informalities: claim 48 is stated as being dependent on claim 48, it should be listed as dependent on claim 47. Appropriate correction is required.

For the purposes of the rejection below, it will be assumed that claim 48 is dependent on claim 47.

Claims 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites the limitation "claim 25" in line 1. There is insufficient antecedent basis for this limitation in the claim. Furthermore, the dependency of claims 26-27 on claim 25 also renders claims 26-27 indefinite.

Claims 36-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36 recites the limitation "claim 36" in line 1. There is insufficient antecedent basis for this limitation in the claim. Furthermore, the dependency of claims 37-38 on claim 36 also renders claims 37-38 indefinite.

Claims 43-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 44 recites the limitation "claim 44" in line 1. There is insufficient antecedent basis for this limitation in the claim. Furthermore, the dependency of claim 43 on claim 44 also renders claim 43 indefinite.

Claims 42, 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Due to the aforementioned dependency issues it would be negligent to render a statement of allowability and/or rejection regarding these claims.

Claims 49-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Due to the aforementioned dependency issues it

would be negligent to render a statement of allowability and/or rejection regarding these claims.

Thus claims 25-27, 36-38, and 42-45, 49-53 are rejected.

Due to the ambiguities in the said claims, the claims rejected above will not be examined below infra.

Applicant is also asked to clarify the inconsistent use of "pixel" and "panel" in the claims.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 7-9, 10-17, 23-24, 28, 34-35 is rejected under 35 U.S.C. 102(e) as being anticipated by Burke et al. (20020176657).**

Burke et al., at fig. 1, teaches a three-dimensional optical cross-connect switch, the switch comprising: a first optical switching array including a first tile disposed in a first plane and a second tile aligned plane-to-plane with the first tile in a second plane, the first tile including a first collimator array disposed adjacent to a first beam steering

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array and the second tile including a second collimator array disposed adjacent to a second beam steering array, the first optical switching array being characterized by a first array maximum deflection angle; and a second optical switching array including a third tile disposed in the first plane and a fourth tile aligned plane-to-plane with the third tile in the second plane, the third tile including a third collimator array disposed adjacent to a third beam steering array, and the fourth tile including a fourth collimator array disposed adjacent to a fourth beam steering array, whereby a switch maximum deflection angle is less than or equal to the first array maximum deflection angle. (figs. 1-3, 4-7, 10-11; page 4 paragraphs 0057-0058; page 6 paragraphs 0078-0084 ; page paragraphs 0101-0102):

Thus claim 1 is met.

By the reasons and references given above each and every element of claims 7-8 are met.

Burke et al. teaches the switch of claim 8, further comprising a control system coupled to the beam steering panel, the control system being configured to provide a control signal to each pixel in the N.times.N array of beam steering pixels. (e.g., page 4 paragraph 0063). Thus claim 9 is met.

By the reasons and references given above each and every element of claims 10-15 are met.

Burke et al. teaches wherein the switch is characterized by a  $z/d$  ratio greater than ten (10),  $z$  being a distance between the first plane and the second plane, and  $d$  being a width of a beam steering array. (paragraphs 0082, 115). Thus claim 16 is met.

By the reasons and references given above each and every element of claims 17, 23-24, 28, 34-35 are met.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 4-6, 20-22, 31-33, 39, 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al. (20020176657).**

Burke et al., at fig. 1, teaches a three-dimensional optical cross-connect switch, the switch comprising: a first optical switching array including a first tile disposed in a first plane and a second tile aligned plane-to-plane with the first tile in a second plane, the first tile including a first collimator array disposed adjacent to a first beam steering array and the second tile including a second collimator array disposed adjacent to a second beam steering array, the first optical switching array being characterized by a first array maximum deflection angle; and a second optical switching array including a third tile disposed in the first plane and a fourth tile aligned plane-to-plane with the third tile in the second plane, the third tile including a third collimator array disposed adjacent

to a third beam steering array, and the fourth tile including a fourth collimator array disposed adjacent to a fourth beam steering array, whereby a switch maximum deflection angle is less than or equal to the first array maximum deflection angle. (figs. 1-3, 4-7, 10-11; page 4 paragraphs 0057-0058; page 6 paragraphs 0078-0084 ; page paragraphs 0101-0102).

Although Burke et al. does not explicitly state "wherein the second optical switching array is characterized by a second array maximum deflection angle" it would have been obvious to do so because it is notoriously well known (NWK) to design components such as those in Burke et al. with an array maximum deflection angle.

Thus claim 4 is rejected.

Although Burke et al. does not explicitly state "wherein the switch maximum deflection angle is less than or equal to the second array maximum deflection angle." it would have been obvious to do so because it is notoriously well known (NWK) that, when you have tiles all of equivalent design (e.g., see Burke et al. paragraph 65), the switch maximum deflection angle will be less than or equal to the second array maximum deflection angle. Thus claim 5 is rejected.

Furthermore, by the same reasoning as for claim 5 above i.e., tiles all of equivalent design, each and every element of claim 6 is also rejected.

By the reasons and references given above each and every element of claims 20-22, 31-33 are rejected.



By the reasons and references given above each and every element of method claims 39, 46-47 are rejected. If Applicant disagrees with this obviousness holding, then Applicant should submit evidence showing this obviousness holding is errant. Examiner will then consider restricting.

***Allowable Subject Matter***

Claims 2-3, 18-19, 29-30, 40-41 (pending dependency correction; see 112 above) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 571-272-2422. The examiner can normally be reached during weekdays, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

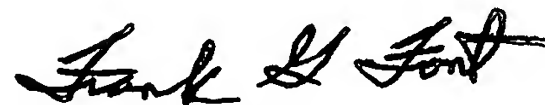
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-

1562.



Michael P. Mooney  
Examiner  
Art Unit 2877



Frank G. Font  
Supervisory Patent Examiner  
Art Unit 2877

FGF/mpm  
3/19/04